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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,917	01/17/2006	Mark T. Johnson	GB 030117	5325

24737 7590 11/19/2009

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
SITTA, GRANT	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
11/19/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,917	JOHNSON ET AL.	
	Examiner	Art Unit	
	GRANT D. SITTA	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 6, 7, 8, and 10-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Friend et al (6,429,601) hereinafter, Friend.

3. In regards to claims 1 and 14, Friend teaches an active matrix **(col. 4, lines 14-15 and abstract)** display device (6) comprising a display (2) with a plurality of display pixels (3), each having **(fig. 6 (23, 23, 21))**:

a current driven emissive element (14)**(fig. 5 19a-19d)**;

a data input (10) for receiving an analogue data signal **(fig. 5 input to (34));**

at least one drive element (T2) connected to a power supply and arranged to drive said current emissive element (14) in accordance with said data signal **(fig. 5 15a-d, 13a connected to data line, and connected to the scan line (10))**;

selecting means (T1; T1,T3,T4) arranged to provide **(fig. 5 (13a-d)),** in response to a select signal (18) **(fig. 5 10 scan line)**, said data signal to said at least one drive element (T2) to generate an overall brightness level during a frame period (F) in

accordance with said data signal **(fig. 7 and 8 and col. 7, lines 18-35)**, wherein said device (6) is adapted to divide said frame period (F) in at least a first sub-period (F1) during which said emissive element **(fig. 8 pulses contained in a frame)**((14) carries a first non-zero current (I1) **(fig. 8 up arrow next to current and corresponding pulses, set of two pulses)** and a second sub-period (F2) during which said emissive element (14) carries a second non-zero current (I2) **(fig. 8 second of two pulses)**, said at least first and second non-zero current substantially yielding said overall brightness level (**col. 7, lines 18-35)**.

4. In regards to claim 2, Friend teaches an active matrix display device (col. 4, lines 14-15) (6) according to claim 1, wherein said device (6) comprises a display controller (7) (fig. 6 (24) control apparatus) for generating said select signal (18) (fig. 6 (25) and fig. 5 scan lines (10)), said select signal (18) comprising at least a first select signal (18') triggering said first sub-period (F1) and a second select signal (18") triggering said second sub-period (F2) (fig. 7 and 8 and col. 7, lines 18-35).

5. In regards to claim 6, Friend teaches an active matrix display device (6) according to claim 1, wherein said device (6) comprises a display controller (7) adapted to generate at least said first current (I1) and said second current (I2) by varying a voltage (13;15) over said current driven emissive element (14) (fig. 6 (24), fig. 7 varied current and col. 7, lines 18-35).

6. In regards to claim 7, Friend teaches an active matrix display device (6) according to claim 1, wherein said drive element (T2) is a thin film transistor having a short channel length (col. 4, lines 3-25).

7. In regards to claim 8, Friend teaches active matrix display device (6) according to claim 1, wherein said display pixels (3) are arranged in a matrix of rows (4) and columns (5), said device (6) comprising lines (13;15) for manipulating a voltage for said drive element (T2) for each row (4) or group of rows (4), and said device (6) comprises a display controller (7) adapted to scan said lines (13;15) along said rows (4) or group of rows (4) across the display (2) (fig. 6 25, 26 and fig. 8 pulses col. 7, lines 28-67).

8. In regards to claim 10, Friend teaches an active matrix display device (6) according to claim 1, wherein said display (2) comprises a subset of display pixels (3) or emissive elements (14) and said device (6) is adapted to supply said first non-zero current (I1) and said second non-zero current (I2) to only said subset (col. 7, lines 36-67).

9. In regards to claim 11, Friend teaches an active matrix display device (6) according to claim 10, wherein said display pixels (3) are coloured display pixels

comprising red, green and blue emissive elements (14) and said subset is defined by colour (col. 6, lines 1-10) .

10. In regards to claim 12, Friend teaches an active matrix display device (6) according to claim 11, wherein said subset consists of said red and blue emissive elements (14) (col. 6, lines 5-10).

11. In regards to claim 13, Friend teaches an active matrix display device (6) according to claim 11, wherein said subset consists of said green emissive elements (col. 6, lines 5-10).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claims 3, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friend in view of Yamazaki et al (6,326,941) hereinafter, Yamazaki.

15. In regards to claim 3, Friend differs from the claimed invention in that Friend does not disclose wherein said first sub-period (F1) and said second sub-period (F2) are of different duration

However, Yamazaki teaches a system and method for wherein said first sub-period (F1) and said second sub-period (F2) are of different duration (fig. 5b col. 7, lines 1-56 varied duration and current of Yamazaki).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Friend to include the use of various pulse shapes during sub-periods or different durations of sub-periods as taught by Yamazaki in order to improve display quality with higher gradation between frame as stated in (col. 3, lines 35-67).

16. In regards to claim 4, Friend as modified by Yamazaki teaches an active matrix display device (6) according to claim 3, wherein said first sub-period (F1) has a shorter duration than said second sub-period (F2) (fig. 5b 64To and 16To Yamazaki).

17. Claim 5 is rejected for the same reasons as claim 3. Furthermore, Friend as modified by Yamazaki teaches an active matrix display device (6) according to claim 1, wherein said first non-zero current exceeds said second non-zero current (fig. 5b 64 To, 16 To Yamazaki).

18. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Friend.

19. Friend does not disclose expressly wherein said device (6) is adapted to yield a brightness at said second non-zero current (I2) of 30% or less of the brightness at said first non-zero current (I1).

However, Applicant has not disclosed that having a device adapted to yield a brightness at said second non-zero current (I2) of 30% or less of the brightness at said first non-zero current (I1) provides an advantage, is used for a particular purpose, or solves a stated problem. As such, having 30%, 40% or 50% is an obvious matter of design choice.

Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the device of Friend adapted to yield a brightness at said second non-zero current (I2) of any percentage, including 30% or less, of the brightness at said first non-zero current (I1) because any percentage would perform equally well at providing the predictable result of providing a cumulative luminance that improves picture quality.

Response to Arguments

20. Applicant's arguments filed 7/15/2009 have been fully considered but they are not persuasive.

21. With respect to Applicant's arguments that Friend fails to disclose elements of a "non-zero" current during the second period. Examiner respectfully disagrees. Friends states, "[a]ccording to a first aspect of the invention there is provided an organic light-emitting having: an organic light-emitting region comprising a plurality of organic light-emitting pixels; first switch means each associated with a respective pixel for switching power to that pixel; and drive means for driving each switch means between a first, low power mode and a second, high power mode, at a frequency sufficient to cause light emission from the associated pixel to appear substantially continuous, the duration of the high power mode relative to the low power mode being variable so as to vary the average brightness of the pixel over the duration of a cycle" (col. 2, lines 53-67). Examiner is interpreting (36), a cycle, to be a frame. Examiner is interpreting each pulse as a sub-period. Therefore, for instance in fig. 8 below the first pulse would be a first sub-period, which contains a "non-zero" value. Next, a low power mode during the subsequent sub-period. After the low power mode, a second pulse is applied which is a "non-zero" pulse.

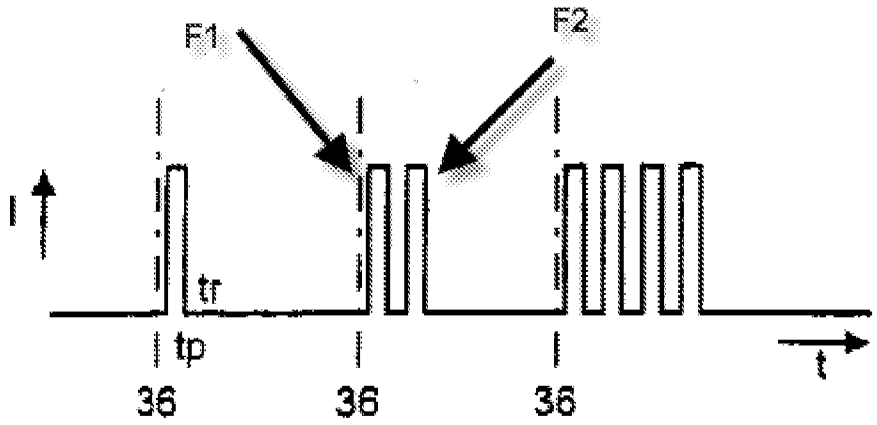

FIG. 8

Applicant also contends the "off" periods are defined. Examiner notes that the current claim limitations do not require the absence of "zero" periods, only a first and second sub-period containing a "non-zero" current substantially yielding said overall brightness level. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

For the reasons stated above the rejection is maintained.

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GRANT D. SITTA whose telephone number is (571)270-1542. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sumati Lefkowitz/

Supervisory Patent Examiner, Art Unit 2629

/Grant D Sitta/
Examiner, Art Unit 2629
November 16, 2009